5200

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R.S.Patton, *Director*

State: New Jersey

DESCRIPTIVE REPORT

~~*Topographic*~~
Hydrographic } *Sheet No.* 5200

LOCALITY

Upper N.Y. Bay

Channel to Pennsylvania

R.R. Terminal

1932

CHIEF OF PARTY

H.A. Cotton

U. S. GOVERNMENT PRINTING OFFICE: 1930

Form 537
Ed. Dec., 1930

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5200

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. .....

REGISTER NO. 5200

State ~~New York~~ New Jersey

General locality Upper New York Bay

Locality Channel to Pennsylvania R.R. Terminal ~~Greenville Channel~~

Scale 1:10,000 Date of survey August, 19 32

Vessel Hired Launch, New York Field Station

Chief of Party ~~Harold A. Cotton~~

Surveyed by ~~Lt. Earle A. Deily~~

Protracted by Earle A. Deily

Soundings penciled by Earle A. Deily

Soundings in ~~fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by .....

Inked by Harold W. Murray

Verified by H.W.M.

Instructions dated July 28, 19 32

Remarks: .....

U. S. GOVERNMENT PRINTING OFFICE: 1931

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET

GREENVILLE CHANNEL ,UPPER NEW YORK BAY

Harold A. Cotton

Chief of Party

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET

GREENVILLE CHANNEL , UPPER NEW YORK BAY.

a- Date of Instructions:

The work embraced by this sheet was done in accordance with the "Instructions" of the DIRECTOR to the Inspector, New York Field Station, dated July 28,1932.

b- Survey Methods:

The work was executed by the usual survey methods. The positions of all triangulations stations as plotted on the sheet are those given in the publication "Triangulation, New York Harbor and Vicinity, Part 1,1930, Preliminary Computations. All supplementary hydrographic stations were located by fixes from the foregoing triangulation stations. Corners of docks, channel markers, buoys and additional topograhic features were also located by sextant fixes.

Sounding lines were run on ranges and parallel to the axis of the channels at approximate 50 meter intervals. The channels were more closely developed. Due to the inexperience of the hired personnel and strong currents frequent changes of course were necessary and more only on positions.

The area sounded was only of sufficient size to cover the channels to the Pennsylvania Railroad and the Lehigh Valley Railroad docks, and to give a connection to the previous work in the main ship channel and to the shoals to the north and south of the channel area. The area to the north west of the Lehigh Valley turning basin was too shoal for soundings to be taken from the boat. A great part of this area bares at low water. Sounding lines were run as far into the slipways as possible; the unsounded areas were covered by barges and debris.

Soundings differing to a great extent from those surrounding were investigated by additional lines and drift soundings. In many casess these differences were found to be miscalling of the leadline readings by the leadsman.

c- Channels:

Lehigh Valley Railroad Channels

This channel is marked by two rows of spars driven into the mud and runs from between buoys N2 and C1 northwestward to and along

the face of the Lehigh Valley Railroad docks. The least depth found in this channel is 30 feet - Latitude 40-40.7 N, Longitude 74-04 W. The channel depth as a whole varies from 32 to 35 feet, with a maximum along the north face of the dock of 40 feet.

There is a narrow entrance to a small turning basin immediately off the southeast corner of the Lehigh Valley dock. Tugs drawing 12 feet use this basin. At the time of the work this area was crowded with barges and rafts. The area immediately to the southeast is foul and a dumping place for rotten spars and rafts. No fixes or soundings could be taken in this area.

Pennsylvania Railroad Channel;

This channel is marked by several spars driven into the mud and runs directly toward the face of the long dock from immediately south of the Bell Buoy 2G. The installation of additional channel markers is contemplated by the Pennsylvania Railroad.

This channel has a least depth of 19 feet, Pos. 57 a, Latitude 40-40.1, Longitude 74-03.4 to the end of the dock. The slip-way area to the northward has considerably more water, controlling depth 22 feet.

The channel in to the coal dock has a controlling depth of 19 feet.

d- Comparisons with Previous Surveys;

Lehigh Valley Railroad Channel- The controling depth is now 30 feet instedd of 35 feet as shown as of 1922.

Pennsylvania Railroad Channel- The depths in this channel are approximately those shown on chart 541- controling depth 19 feet.

Buoys- The positions of the entrance buoys have changed. The positions of these buoys are plotted on the smooth sheet. N2 Pos. 149 e; 61 Pos. 159 e; Bell 2G Pos. 1f . Bell Buoy 4 PR-FLW Latitude 40-40.3, Longitude 74-03.5, is no longer maintained.

Lights- The occulting red light immediately NNE of Robbins Reef Light is on the outfall of the Passaic Valley sewer, a circular stone structure.

Sand Island Light, Latitude 40-39-59, Longitude 74-04-27 is on a small steel tower situated on a concrete foundation at the south-east end of a small sand island. This island was located by fixes along the northern highwater line and approximately measured width. The height of the island is about 15 feet. This island was apparently thrown up during the construction of the Passaic Valley Sewer as an intermediate coffer dam is still in existance.

A short rock breakwater, baring at high water lies in Latitude 40-40.4, Longitude 74-04.8, and was located by fixes, pos.82-83 f.

Inshore from the rock breakwater mentioned above, extending from Latitude 40-40.5- Longitude 74-04.9 in a northwesterly direction to the shore is a ruined dock. Rows of piling are all that remains. The outward end is marked by sunken piles.

Considerable change was found in the position and shape of the Pennsylvania Railroad and Lehigh Valley property.

1- A fog bell is maintained on the end of the long Pennsylvania Railroad dock.

2- There are now five slips for Pennsylvania Railroad car ferries.

3- The breakwater extending from Latitude 40-40.6 Longitude 74-03.9 to Latitude 40-40.8 Longitude 74-04.4 has a dock above it. This dock is in ruins at both ends. Railroad tracks are on the middle section and extend to the shore across a trestle built on a curve. This was not shown on Chart 541.

4- The remains of a dock extend from Latitude 40-40.6 Longitude 74-03.9 to Latitude 40-40.8 Longitude 74-04.3. The inshore end rests on a mass of rocks just bare at low water. Thereis a channel from here to the Lehigh Valley Dock (aforementioned).

e- Stastics;

Total Number of Positions	619
Total Number of Soundings	1902
Statute miles of sounding lines	48.6

f- Lead Line Corrections;

The leadline used was of extremely poor quality and showed changes each day it was being used. The shrinkage was such that the bronze center came thru the casing in several places. The leadline was measured at the beginning and end of each day. Graphs were drawn, the change distributed throughout the whole day and the reducers as entered in the records to half feet were taken directly from the graph dependent on the sounding and time. The graphs are attached hereto.

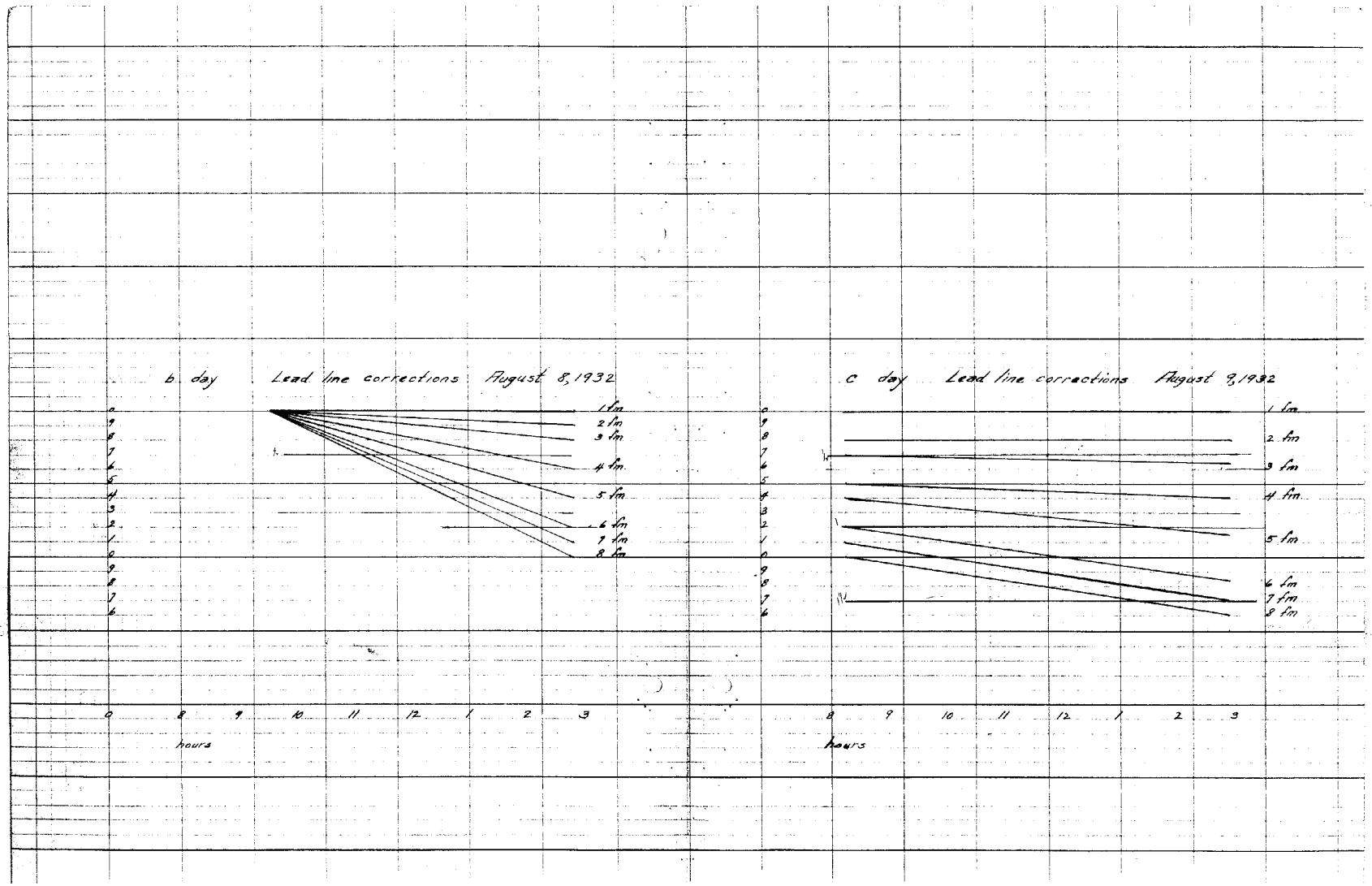
g- Tidal Data:

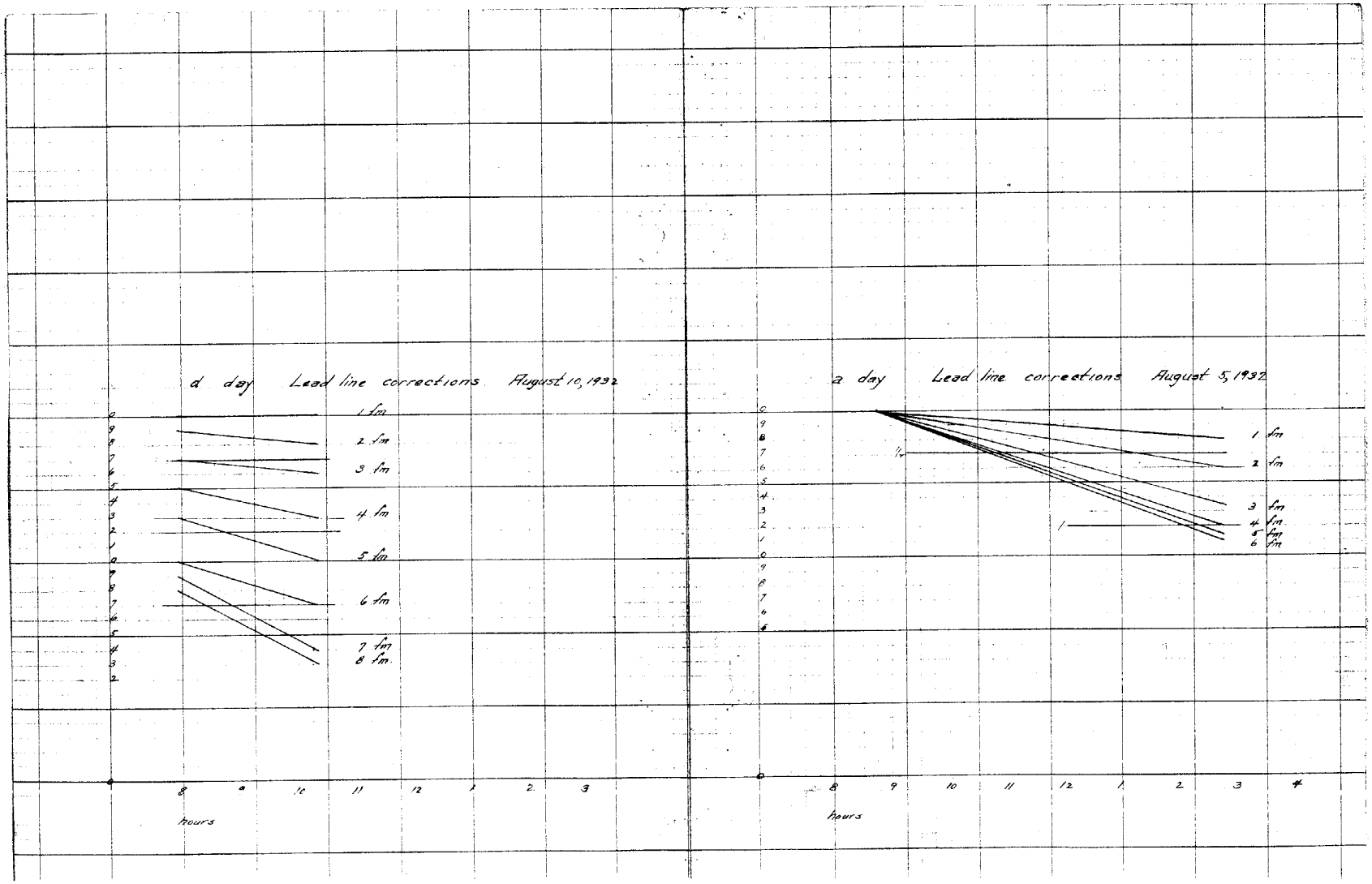
Reductions for tides were made to the nearest half foot conforming to the unit as used for leadline corrections. The tidal data for the completed records was taken from the record of the automatic gauge, Battery, New York. The tidal data for the boat sheet was taken from the predicted tides, Governors Island. The Army Engineers maintain an automatic gauge on the Lehigh Valley dock but as yet no datum has been determined. The tidal Data is attached hereto.

Note: F day is not plotted on the boat sheet as the topographic locations are all plotted directly on the smooth sheet and the few soundings taken this day were to check discrepancies found in plotting.

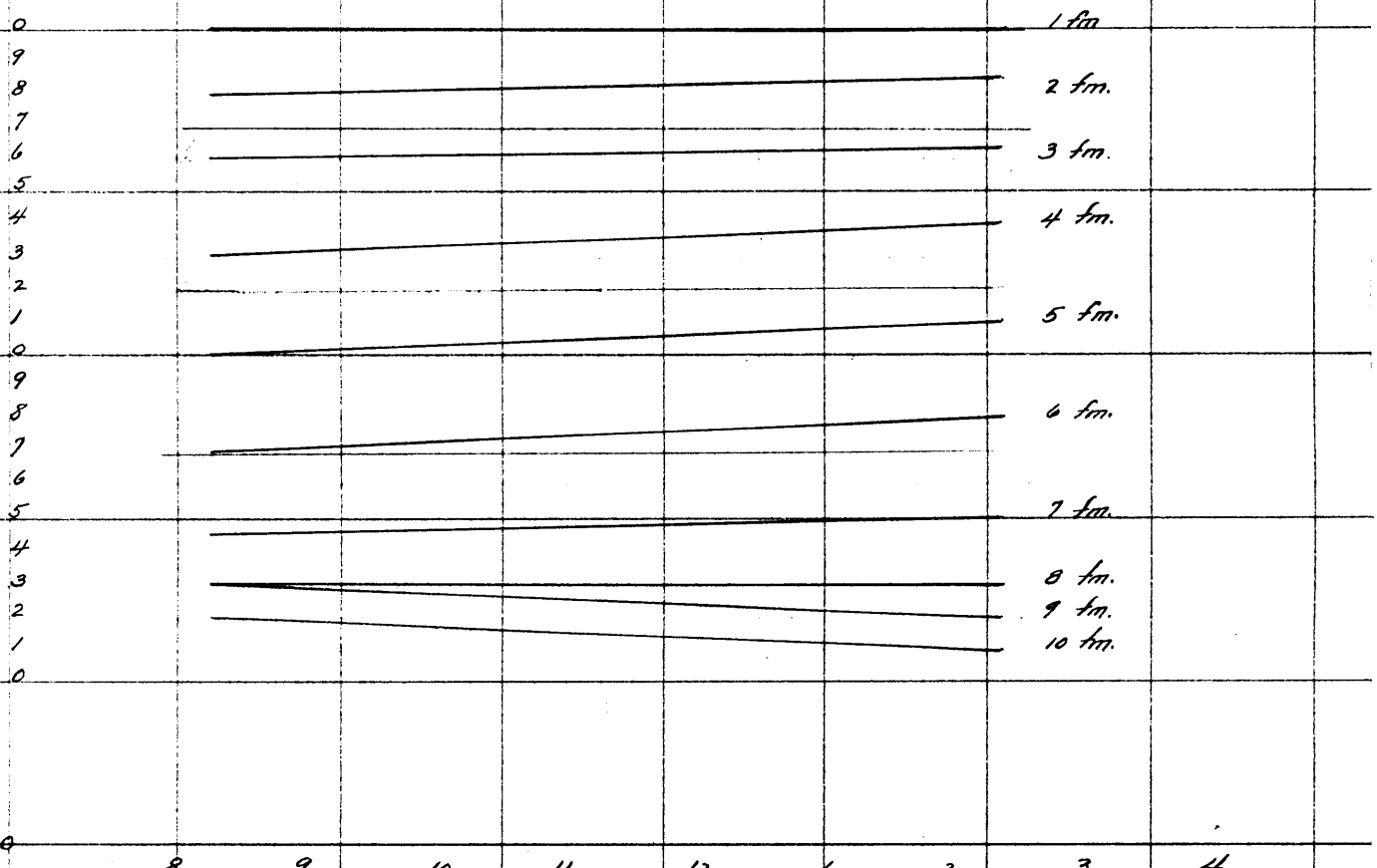
Approved:
Harold A Cotton

Respectfully submitted
Earle A. Deily
Earle A. Deily
H.& G. Engr.

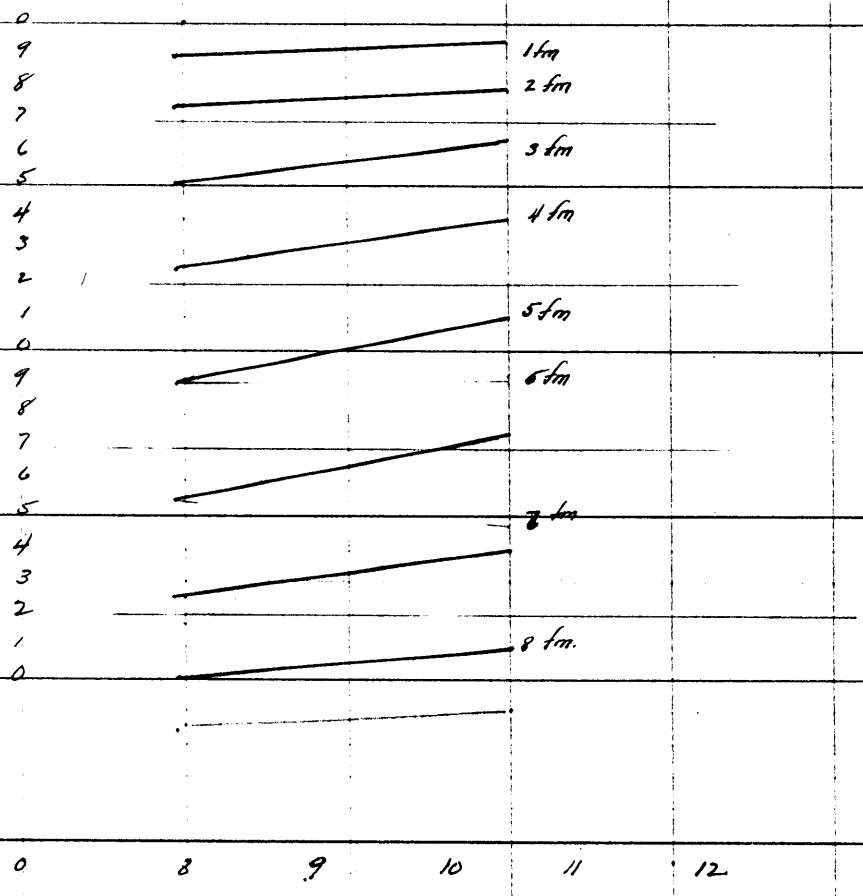

B day Lead line corrections August 8, 1932
1 fm
2 fm
3 fm
4 fm
5 fm
6 fm
7 fm
8 fm
0 8 9 10 11 12 1 2 3
hours
C day Lead line corrections August 9, 1932
1 fm
2 fm
3 fm
4 fm
5 fm
6 fm
7 fm
8 fm
8 9 10 11 12 1 2 3
hours


d day Lead line corrections August 10, 1932
1 fm
2 fm
3 fm
4 fm
5 fm
6 fm
7 fm
8 fm
hours
a day Lead line corrections August 5, 1932
1 fm
2 fm
3 fm
4 fm
5 fm
6 fm
hours

e day Lead Line corrections Aug. 11, 1932



1 day Lead Line Corrections August 23, 1932



Tides – Automatic Gauge, Battery, New York City

August 5, 1932

all heights referred to M.L.W.
taken from August tide roll.

Time	Ht.	Time	Ht.
8:00 am	3.5	12:00 n.	4.2
8:10	3.7	12:10	4.0
8:20	3.9	12:20	3.8
8:30	4.0	12:30	3.5
8:40	4.2	12:40	3.2
8:50	4.4	12:50	3.0
9:00	4.4	1:00	2.8
9:10	4.6	1:10	2.6
9:20	4.7	1:20	2.4
9:30	4.7	1:30	2.2
9:40	4.8	1:40	2.1
9:50	4.9	1:50	1.8
10:00	5.0	2:00	1.6
10:10	5.0	2:10	1.5
10:20	5.0	2:20	1.4
10:30	5.0	2:30	1.2
10:40	5.0	2:40	1.1
10:50	5.1	2:50	1.0
11:00	5.0	3:00	0.9
11:10	5.0		
11:20	4.9		
11:30	4.7		
11:40	4.6		
11:50	4.4		
12:00	4.2		

August 8, 1932

Time	Ht	Time	Ht.
9:00 am	2.2	12:00 n	4.8
9:10	2.4	12:10	4.8
9:20	2.7	12:20	4.9
9:30	2.9	12:30	5.0
9:40	3.0	12:40	5.0
9:50	3.2	12:60	5.1
10:00	3.4	1:00	5.1
10:10	3.5	1110	5.2
10:20	3.7	1:20	5.2
10:30	3.8	1:30	5.2
10:40	3.9	1:40	5.1
10:50	4.0	1:50	5.1
11:00	4.1	2:00	5.0
11:10	4.2	2:10	4.9
11:20	4.4	2:20	4.7
11:30	4.5	2:30	4.5
11:40	4.6	2:40	4.4
11:50	4.7	2:50	4.2
12:00	4.8	3:00	4.0
		3:10	

August 9, 1932

Time	Ht	Time	Ht
8:00 am	0.3	12:00 n.	4.2
8:10	0.3	12:10	4.3
8:20	0.5	12:20	4.4
8:30	0.6	12:30	4.5
8:40	0.7	12:40	4.6
8:50	0.9	12:50	4.7
9:00	1.1	1:00	4.8
9:10	1.3	1:10	4.9
9:20	1.5	1:20	4.9
9:30	1.7	1:30	5.0
9:40	1.9	1:40	5.0
9:50	2.1	1:50	5.1
10:00	2.3	2:00	5.1
10:10	2.5	2:10	5.1
10:20	2.7	2:20	5.1
10:30	2.9	2:30	5.0
10:40	3.1	2:40	4.9
10:50	3.3	2:50	4.8
11:00	3.4	3:00	4.7
11:10	3.5		
11:20	3.7		
11:30	3.8		
11:40	4.0		
11:50	4.1		
12:00			

August 10, 1932

Time	Ht	Time	Ht
7:00 am	0.9	12:00	
7:10	0.9	12:10	
7:20	0.8	12:20	
7:30	0.7	12:30	
7:40	0.7	12:40	
7:50	0.6	12:50	
8:00	0.6	1:00	
8:10	0.5	1:10	
8:20	0.5	1:20	
8:30	0.4	1:30	
8:40	0.5	1:40	
8:50	0.5	1:50	
9:00	0.5	2:00	
9:10	0.6	2:10	
9:20	0.7		
9:30	0.8		
9:40	0.9		
9:50	1.0		
10:00	1.2		
10:10	1.4		
10:20	1.6		
10:30	1.8		
10:40	1.9		
10:50	2.0		
11:00	2.3		
11:10			
11:20			
11:30			
11:40			
11:50			
12:00			

August 11, 1932

Time	Ht	Time	Ht.
8:00	1.4	12:00	1.8
8:10	1.3	12:10	2.0
8:20	1.2	12:20	2.2
8:30	1.1	12:30	2.4
8:40	1.1	12:40	2.7
8:50	1.0	12:50	2.9
9:00	0.9	1:00	3.1
9:10	0.8	1:10	3.4
9:20	0.8	1:20	3.5
9:30	0.7	1:30	3.7
9:40	0.6	1:40	3.9
9:50	0.5	1:50	4.1
10:00	0.4	2:00	4.3
10:10	0.4	2:10	4.4
10:20	0.4	2:20	4.5
10:30	0.4	2:30	4.7
10:40	0.5	2:40	4.8
10:50	0.6	2:50	4.9
11:00	0.8	3:00	5.0
11:10	0.9		
11:20	1.1		
11:30	1.3		
11:40	1.5		
11:50	1.6		
12:00	1.8		

August 23 193x

Time	Ht
7:30 am	1.1
7:40	1.2
7:50	1.3
8:00	1.4
8:10	1.6
8:20	1.8
8:30	1.9
8:40	2.0
8:50	2.2
9:00	2.3
9:10	2.4
9:20	2.6
9:30	2.7
9:40	28
9:50	2.9
10:00	3.0
10:10	3.2
10:20	3.3
10:30	3.4
10:40	3.4.

June 10, 1933.

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 5200

Locality **Channel to Pennsylvania RR. Terminal, Upper New York Bay**

Chief of Party: **H. A. Cotton in 1932**
Plane of reference is **mean low water, reading**
2.8 ft. on tide staff at **Whitehall Street, New York City**
10.2 ft. below B. M. **242-E**

Height of mean high water above plane of reference is 4.4 ft.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5200

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	619
Number of positions checked	248
Number of positions revised	6
Number of soundings recorded	1902
Number of soundings revised	38
Number of signals erroneously plotted or transferred	✓

Date: Sept. 9, 1932

Cartographer: Harold W. Murray

Sept, 10, 1932

Section of Field Records
Report on H-5200
Channel to Penna. Railroad Terminal
Surveyed in Aug. 1932

Chief of Party – H. A. Cotton
Surveyed by – E. A. Reily
Protracted by – E. A. D.
Soundings plotted by – E. A. D.
Verified & inked by – Harold W. Murray

1. The records conform to the requirements of the Hydrographic Manual.
2. The plan, character and extent of development satisfy the general requirements.
3. Agreement of sounding line crossings is excellent.
4. The usual depth curves can be satisfactorily drawn within the limits of the hydrography.
5. The field protracting and plotting of soundings were very accurate. It would have been desirable if position numbers had been given to Buoy cuts and to fix is outlining the adjacent topography. The use of green

ink for position nomenclature was very undesirable in this survey on account of the congestion of the work, running of the ink, lack of legibility and permanence. If red ink had been used, verification would have been quite simplified.

6. No Topographic Sheet accompanies this Sheet. Topography as shown was obtained by 3-point fixes and checked by the verifier. Upon comparison with the Chart, several changes will be noted.

7. Comparison of lines with Chart #541 reveals the 35 ft. channel to be practically the same except for a tendency to close near the southeast end. The controlling depth has been reduced to about 30 ft.

The width of the channel outlined by the 18 ft. curve has been reduced about one-third. The controlling depth is about 19 ft. If the Spar ~~Buoys~~ are to outline an 18 ft. channel, they should either be moved accordingly or else the sides of the channel should be dredged back to the buoy limits.

8. About 17 buoys are on this sheet all but two of which were verified. The major portion are Spar Buoys, are not shown on the

Chart and are thought to have been privately installed by the Railroad Companies.

The following changes are noted:-

Buoy	App. Lat.	App. Long.	Remarks
N2	40° 40.2	74° 3.23	about 20m S. of charted position
C1	40.16	3.23	" 10m S.E. " "
2G	40.13	3.28	" 30m ~~N.W.~~ S. " "

Bell Buoy 4PR-FLW, in approx. lat. 40°40.3, long. 74° 3.5 is no longer maintained but a Spar Buoy has been placed about 30m. northwest of this location.

9. The 26 ft. sdg. (pos 135c) in lat. 40° 40.24, long. 74° 3.27 is questioned in the records. A probability of a 1-fm. error exists in the 23 ft. sdg. (pos 34d, not plotted) in lat. 40° 41.4, long. 74° 4.38.

The line 40-42b in lat. 40°40.15, long. 74° 3.3 is slightly deeper than the surrounding lines. The 26 & 34 ft sdgs of this line were omitted.

The line of 52-55 ft day in approx. lat. 40° 40.1, long. 74° 3.8, while not plotted by the field party, was plotted by the reviser in pencil. As the area was congested and all soundings in good agreement, the line was omitted as recommended.

It would have been desirable if the 15 ft. sdg. near pos. 105 b, lat. 40° 40.36, long. 74° 3.4 and the 20 ft. sdg. @ pos. 25 b, lat. 40° 40.51, long. 74° 4.0 had received further consideration.

10. Tide reducers for this sheet have not been verified as yet by this office but have been checked against the Hourly Height as furnished by the chief of Party.

11. Respectfully submitted — Harold L. Murray

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 82-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 5200

Channel to Pennsylvania Ry. Terminal, Upper New York Bay, N. J.

Surveyed August, 1932

Instructions dated July 28, 1932 (Inspector, New York)

Chief of Party, Harold A. Cotton

Surveyed by E. A. Deily

Protracted and soundings plotted by E. A. D.

Verified and inked by Harold W. Murray

1. The records conform to the requirements of the Hydrographic Manual.

2. The development satisfies the specific instructions.

3. Soundings:-- Apparent discrepancies in depths due to inexperienced leadsmen, were examined in the field except position 34 d which was questioned later by the field party. This sounding (23) falls in an improved channel with depth of 29 between it and the bank. The sounding was rejected.

   Position 49 d was plotted to agree with notes and boatsheet, the left angle probably was misread 4 degrees. The depths in the vicinity are in good agreement.

   The aids to navigation are - buoy N2, buoy C, and bell buoy 2 G; in addition 9 piles mark the channel to the Lehigh Valley dock and 4 piles mark the channel to the Pennsylvania Ry. dock.

4. Depth curves were drawn on the sheet.

5. Comparison with chart 541:

(a) The dredged channel to the Lehigh Valley R.R. dock has shoaled to an effective depth of 32 feet which is further complicated by a 30 foot spot almost in mid channel 1200 meters from the end of the dock. There has also been some shoaling in the turning basin northeastward of this dock.

(b) The effective depth of the channel to the Pennsylvania Ry. dock is 20 feet ~~but the width~~ but the width between 18 foot curves is only about half that shown on the chart. The inner bell buoy has been discontinued.

(c) There are now five ferry slips at the Pennsylvania Terminal. There has been considerable shoaling on the south side of the long dock and on the north side of the dock next southward.

(d) Aids to navigation are changed in position.

6. Recommendation: The information on this sheet (H. 5200) should supersede the information now on the charts, both as to topography and hydrography. There is no separate topographic sheet showing the changes around the docks. Note the addition of "Sand Island."

7. Reviewed by R. J. Christman, September 12, 1932.

Sheet Inspected by A. L. Shalowitz.

Approved:

L. O. Colbert
Chief, Section of Field Records

Chief, Division of Charts

Chief, Section of Field Work

Chief, Div. of Hyd'y and Tides